STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

Re: Petition of Pennichuck East Utility, Inc. for Approval of Financings
Under the State Revolving Loan Fund for
Water Main Improvements In Phase 1 of the Windwood/Monroe Section
of the Locke Lake and W&E Water Systems
and of Pumping Facility Replacement in the Hardwood Water System
DW 14-___

DIRECT PREFILED TESTIMONY OF JOHN J. BOISVERT

January 22, 2014

Professional and Educational Background

Q. What is your name and what is your position with Pennichuck East Utility, Inc.?

A. My name is John J. Boisvert. I am the Chief Engineer of Pennichuck Water Works, Inc. ("PWW"), which provides services to Pennichuck East Utility, Inc. ("PEU" or the "Company") pursuant to a management allocation agreement. I have worked for PWW since February 1, 2006. I am a licensed professional engineer in New Hampshire and Maine.

Q. Please describe your educational background.

A. I have a Bachelor of Science degree and a Master of Science degree in Civil Engineering from the University of New Hampshire in Durham, New Hampshire. I also have a Master's degree in Environmental Law and Policy from Vermont Law School in South Royalton, Vermont.

Q. Please describe your professional background.

A. Prior to joining PWW, I served as a Team Leader for Weston & Sampson Engineers of Portsmouth, New Hampshire in their Water Practices Group from 2000 to 2006. Prior to Weston & Sampson I was employed by the Layne Christensen Company of Shawnee Mission, Kansas as Regional Manager for their Geosciences Division in Dracut, Massachusetts from 1994 to 2000. I completed graduate school in 1992 and was employed by Hoyle, Tanner, & Associates of Manchester, New Hampshire as a Project Engineer from 1992 to 1994. Prior to entering full time graduate programs at the University of New Hampshire and Vermont Law School I was employed by Civil Consultants of South Berwick,

Maine as a Project Engineer from 1986 to 1989 and by Underwood Engineers of Portsmouth, New Hampshire as a project Engineer from 1985 to 1986.

Q. What are your responsibilities as Chief Engineer of the Company?

A. As Chief Engineer, I am responsible for the planning, design, permitting, construction, and startup of major capital projects, including pipelines, reservoirs/dams, building structures, pumping facilities, treatment facilities, and groundwater supplies. I provide regular technical assistance to PWW's Water Supply Department, Operations Department, Customer Service Department, and Senior Management.

Q. What is the purpose of your testimony?

A. I will be describing the three Company projects, the first to replace approximately 6,000 linear feet ("LF") of small diameter PVC water main in Phase 1 of the Winwood/Monroe section of the Locke Lake Water System located in Barnstead, New Hampshire (hereinafter referred to as the "Locke Lake" project), the second is to replace approximately 8,500 LF of small diameter HDPE water main at the W&E Community Water System (hereinafter referred to as the "CWS" project) in Windham, New Hampshire, and the third is to completely replace the existing Hardwood CWS treatment/storage/pumping facility, located in Windham, New Hampshire, with a new facility (hereinafter referred to as the "Hardwood" project). The Company is seeking approval to finance the three projects with the proceeds of three loans issued by the New Hampshire Department of Environmental Services ("NHDES") through the State Revolving Fund ("SRF").

Please see Exhibit JJB-1 for the NHDES letter offering SRF Loan funds for these three projects.

Q. What are the terms of the SRF loans?

A. The NHDES is offering a $400,000 loan with a 20-year term with level total payments and a current interest rate of 2.72% per annum to fund the Locke Lake Water project. The NHDES is offering a $550,000 loan with a 20-year term with level total payments and a current interest rate of 2.72% per annum to fund the W&E project. The NHDES is offering a $572,000 loan with a 20-year term with level total payments and a current interest rate of 2.72% per annum to fund the Hardwood project.

Q. Are any of these projects eligible for Principal Forgiveness?

A. No. Median Household Incomes in these communities exceed those that would qualify these projects for principal forgiveness.

Q. Could you please describe why the Company believes it needs to replace water main in the Locke Lake Water System given the piping in question is less than 40 years old?

A. Approximately 84,000 LF of the original 104,000 LF of water main remains in the Locke Lake Water System. There is approximately 38,000 LF of 4" and 3" schedule 40 glued joint PVC electrical conduit and approximately 46,000 LF of 2" 160 PSI IPS HDPE with nylon stab fittings or 2" SDR21 PVC with glued joints. Neither type of pipe meets the AWWA standard for water mains. The schedule 40 glued joint PVC (all sizes) is consistently failing at the joints while the 2" HDPE consistently fails at the nylon stab fittings. Over the past three years

(2010, 2011 and 2012) the Company has repaired 60 leaks in the Locke Lake Water System; 24 have been water main breaks with the remaining 36 leaks occurring on the main to stop portion of a service. When the system was acquired in 2006, unaccounted for water in the Locke Lake Water system constantly exceeded 60 gpm or about 125% unaccounted for water. Unaccounted for water currently averages about 28 gpm or about 60% unaccounted for water due to the fact that as soon as one leak is found and repaired another leak develops. The Company believes that the only way to eliminate the constant leakage is to replace all the water mains and water services (main to stop) in the Locke Lake system that fail to meet AWWA standards for water main. The current main replacement program along with a diligent effort at leak detection is responsible for the reduction in unaccounted for water from over 125% to slightly over 60%.

Q. How much has the Company spent on repairs during the past several years at Locke Lake?

A. The Company has spent an average of about $50,000 per year over the past three years in water main and water service repairs.

Q. If system leakage is a problem why doesn't the Company replace the remaining 84,000 LF of the substandard water main in the Locke Lake Water System as opposed to the proposed (estimated) 6,000 LF?

A. As the Commission is aware, the rates at Locke Lake are already very high. Based on the 2011, 2012, and 2013 construction costs, the Company is replacing water main for about $72 per LF (including services). Replacing all of the remaining water main at once would cost over $6.1 million dollars and would

have a large impact on the water rates of all PEU's customers. The ROI, depreciation expenses and property taxes on $6.1 million dollars of over $435,000 per year will not be offset by the annual reduction in operating expenses associated with repairing the leaking water mains and services and treating the lost water. In an effort to mitigate rate increases associated with the water main replacement in Locke Lake the Company's plan is to balance the cost of investing in new water main against the cost and risks of water main leaks. In the past two years the Company targeted its total investment per customer in Locke Lake to approximately equal the amount it invested per non-Locke Lake customer in PEU. The investment amount per non-Locke Lake PEU customers in 2014 is projected to be about $370 per customer (based on 5,988 non-Locke Lake PEU customers and projected 2014 non-Locke Lake capital expenditures of about $2.2 million). This level of per customer investment would result in an approximate investment in Locke Lake of about $316,000.

Q. If the target amount of investment in Locke Lake is $316,000 why is PEU proposing to spend $400,000?

A. The Company is balancing the impact of completing the replacement of all the substandard water main in Locke Lake against the cost of continued leakage and the associated rate impact, in addition to completing large enough sections of project to help minimize the impact of mobilization and demobilization costs. Additionally, the Company believes that the unique low interest rate climate and aggressive bidding environment justify an investment level of $400,000 versus a

target of $316,000. Investing $83,000 more than the target amount will allow for the replacement of about 1,200 LF more water main.

Q. What is the annual additional cost to PEU's ratepayer's of completing an additional $83,000 of replacement work at Locke Lake?

A. The estimated annual additional cost would be about $6,000, or about $0.86 per customer per year based on an interest rate of 2.72%, an average depreciation rate of 1.75%, local property taxes with a mil rate of 20.87 per $1,000 and the State Wide Utility Tax rate of $6.60 per $1,000.

Q. Will the Company replace the main to stop portion of the services as it replaces the water mains at Locke Lake?

A. Yes. The existing services consist of one ¾" IPS HDPE service (main to stop) for every two homes. The small diameter of the services creates pressure problems for homeowners when both homes receive water. The Company will replace each single ¾" IPS HDPE service with two 1" copper services. It is essential that services be replaced since about one half of the system leaks each year occur on the main to stop portion of the service.

Q. Please describe the proposed W&E water main replacement project.

A. The W&E Water System is an independent Community Water System that provides water service to 209 customers. The W&E Water System is located in Windham, NH. The W&E system contains approximately 44,000 linear feet of 2, 3, 4, 6, and 8 inch diameter water main. Water mains installed after the Company acquired the system in 1998 are consistent with AWWA standards. This project proposes to replace approximately 8,500 feet of 2, 3, and 4 inch diameter

polyethylene ("PE") and PVC water main that does not meet current AWWA standards and replace all main to stop sections of customer services. The system has had approximately 80 failures since 1998. The W&E system often experiences spikes in unaccounted for water loss of 20%. This amount of leakage and failure is critical for a system with limited supply.

Q. Please describe the proposed Hardwood Station replacement project.

A. The Hardwood community water system serves 40 residential customers. The Company acquired the system in 1998. The original station underwent expansion and numerous system upgrades beginning in 2000 that included treatment equipment to maintain compliance with the Safe Drinking Water Act ("SDWA") and to treat for secondary (aesthetic) compounds such as hardness, iron, and manganese. The existing structure was never designed to accommodate this equipment efficiently. All of the original piping has become corroded, the existing storage tanks are suffering the same fate, the electrical systems (panel, motor starters, instrumentation) have reached the end of their useful life, and the existing treatment equipment (filters, softeners, and chemical feed) have reached the point of replacement. The Company evaluated using the same structure and completing all of the repairs and replacements while keeping critical systems operating. There is simply not enough room to install the new equipment while the old remains in service.

The Company has determined that it is best to simply move about 100 feet from the existing station and build a new station and storage. The new station will include a constant pressure booster station, new atmospheric storage tanks, new

chemical feed equipment, new filtration and softening systems, new electrical systems including standby emergency power (reuse the generator installed in 2013), and new SDADA communications equipment.

Q. Could the Company avoid having to replace the station by interconnecting the Hardwood system to a larger nearby water system?

A. No. There are no community water systems or larger "municipal" water systems in close enough proximity to Hardwood with sufficient capacity to support the Hardwood demand.

Q. Does the Company intend to complete the Locke Lake, W&E and Hardwood projects in 2014?

A. Yes, with respect to the amount of financing requested in this petition. The work at Locke Lake will continue for more than a decade and be completed in similar sized projects each year. The work at W&E is the first phase of what will be a two or three phase project. Phases two and three of W&E will be completed within the next two to seven years. The Hardwood project is expected to be completed in 2014. The ability to complete these projects during 2014 is dependent upon getting the project construction underway in the early summer. To accomplish this, the NHDES and the Company need to close on these loans in early May.

Q. Please describe the estimated timeline required to complete the three projects in 2014.

A. The NHDES would like to finalize the loan documents associated with this loan on or before May 1, 2014. The NHDES cannot finalize the loan documents

without the NHPUC approving the proposed financing for this project. The list below provides an estimated timeline for the three projects:

Regulatory Approvals and Permits (All Projects) with Estimated Dates

1. Company Board Resolution approving SRF loan (vote by consent) – December 20, 2014. (COMPLETED)
2. File financing petition with Commission – January 22, 2014.
3. NHPUC approval of Financing – April 18, 2014.
4. Sign SRF Loan Documents for all Projects – on or before May 1, 2014.

Locke Lake Project with Estimated Dates

1. Complete Engineering Design – March 15, 2014.
2. NHDES approval of proposed design – April 1, 2014 for Locke Lake.
3. Bid Locke Lake water main replacement project – April 15, 2014.
4. Open bids for Locke Lake water main replacement project – May 15, 2014.
5. Construction begins on Locke Lake Project – June 15, 2014.
6. Locke Lake Project substantial completion – November 30, 2014.

W&E Water Main Replacement Project with Estimated Dates

1. Complete engineering design – March 30, 2014.
2. NHDES approval of proposed design – April 15, 2014.
3. Bid the W&E water main project – April 30, 2014.
4. Open bids for the W&E water main project – May 30, 2014.
5. Construction begins on the W&E water main project – June 21, 2014.
6. W&E water main project substantial completion – November 30, 2014.

Hardwood Station Project with Estimated Dates

1. Complete engineering design – April 1, 2014.
2. NHDES approval of proposed design – April 15, 2014.
3. Bid the Hardwood station replacement project – May 1, 2014.
4. Open Bids for the Hardwood station replacement project – June 1, 2014.
5. Construction begins on the Hardwood station replacement project – July 1, 2014.
6. Hardwood station replacement project substantial completion – December 30, 2014.

Q. Does this complete your testimony?

A. Yes.